

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application of:	Before the Board of Appeals
Takayasu YAMAZAKI et al.	
Application No.: 10/585,759	Confirmation No.: 7895
Filed: July 12, 2006	Art Unit: 3656
For: RACK-AND-PINION STEERING APPARATUS	Examiner: M. Johnson

REPLY BRIEF

MS APPEAL BRIEF-PATENTS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

As required under § 41.41, this Reply Brief is being filed within two months of the date of mailing of the Examiner's Answer and is in furtherance of the Notice of Appeal

For clarity, the issues presented in the Appeal Brief filed August 25, 2010, will be repeated, and the Reply to the Examiner's Answer will correspond structurally to the arguments section in the Appeal Brief.

I. ISSUE ON APPEAL

The Final Office Action provides two (2) grounds of rejection for review on appeal.

- 1) Claims 5-7 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,382,389 to Namiki et al. (“Namiki”) in view of U.S. Patent No. 6,080,199 to Umeyama et al. (“Umeyama”), and in further view of U.S. Patent No. 6,023,989 to Imase et al. (“Imase”).
- 2) Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable Namiki in view of Umeyama and Imase, and in further view of U.S. Patent No. 6,834,742 to Nakatsu et al. (“Nakatsu”).

II. NEW POINTS OF ARGUMENT RAISED BY THE EXAMINER'S ANSWER

In the Examiner’s Answer, in response to Appellants arguments regarding the teachings of Imase and the hypothetical combination of Namiki in view of Umeyama and in further view of Imase, the Examiner first states that Appellants have argued that the teachings of Imase would lead one of ordinary skill in the art to replace the teeth of Namiki with rollers and further states that “Imase is cited only for his teaching of shifting the point of contact between the rack and pinion so that a trochoid interference is positive for the purpose of ensuring proper meshing of the pinion and rack to reduce gear noise (see Figs. 6 and 7 and C5 L64-C6 L14).” See pages 10 and 11 of Examiner’s Answer.

III. REPLY

Appellants respectfully submit that the Examiner has first minimized and over simplified Appellants arguments regarding Imase. In particular, Appellants specifically stated:

Imase is directed to a rack and pinion structure where either the pinion or the rack is composed of a plurality of rollers. The purpose of using a roller is to obviate the inconvenience caused by a structure in which a tooth meshes with another tooth. Compare col. 1, ll. 31-35 to Figs. 18, 19, and col. 1, ll. 18-30. In other words, Imase, as a whole, is directed at a rack and a pinion that overcomes the problems of meshing teeth (e.g., the teeth of Namiki and Umeyama) by replacing one set of teeth with rollers. As such, if anything, Imase would suggest to one of ordinary skill in the art the desirability of replacing the teeth of either the rack or pinion with rollers. Moreover, it cannot be said that Imase teaches or suggest providing a trochoid interference clearance of rack teeth and pinion teeth being positive. Therefore, one of ordinary skill in the art would not look to Imase to teach modifying a hypothetical combination of Namiki and Umeyama further to provide a positive trochoid interference clearance of the rack teeth and pinion teeth.

See Appeal Brief, pg. 14.

Appellants clearly stated that if one of ordinary skill in the art were concerned with the problems of meshing teeth in the hypothetical combination of Namiki and Umeyama, then Imase, at best, teaches replacing one set of teeth with rollers. In other words, Appellants believe that one of ordinary skill in the art would not look to Imase to modify Namiki and Umeyama to derive the claimed invention because Imase discloses nothing about solving problems of meshing teeth by providing a positive trochoid interference of the rack teeth and the pinion teeth. Rather, Imase discloses replacing one set of teeth with rollers and to suggest otherwise ignores the explicit teachings of Imase.

Furthermore, Appellants respectfully submit that the relied on portions of Imase (Figs. 6 and 7 and C5 L64-C6 L14) merely disclose that “a pitch line of the rack is shifted to be outside of the arrangement pitch circle of the roller (positive profile shift)” and that “the teeth of the

roller are profiled by a contour removed from the common trochoidal curve which is the path drawn by the center of the roller by the radius of the roller on which meshing is actually performed.” Imase is silent as to the amount of shifting of the meshing position of the rack and the roller. As such, Imase fails to teach the claimed feature of independent claim 5 on which it is expressly relied on for teaching, namely, that “a trochoid interference clearance of the rack teeth and the pinion teeth is positive.”

Consequently, even assuming that one of ordinary skill in the art were to combine Namaki, Umeyama, and Imase, which Appellants do not concede for the reasons presented above and in the Appeal Brief filed August 25, 2010, the resultant combination would still not teach all features of independent claim 5.

Claims 6, 7, and 9 are allowable for at least the same reasons as set forth in the Appeal Brief filed August 25, 2010 as well as those noted above.

Claim 8 is allowable for at least the same reasons that claim 5 is allowable, as well as for the arguments separately presented in the Appeal Brief filed August 25, 2010.

Reconsideration and reversal of the rejections of claims 5-9 are respectfully requested.

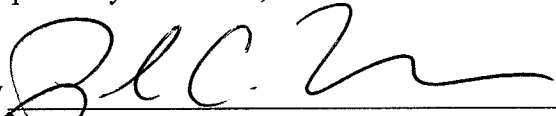
IV. CONCLUSION

Appellant relies on the arguments set forth in Appellant’s Appeal Brief for those issues the Examiner has merely repeated those assertions set forth in his claim rejections. For all of the reasons set forth above, each of the rejections in the Examiner’s Answer dated December 28, 2010, is improper. It is therefore respectfully requested that the Examiner be reversed on all grounds.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Dated: **FEB 16 2011**

Respectfully submitted,

By 
Paul C. Lewis

Registration No.: 43,368

BIRCH, STEWART, KOLASCH & BIRCH, LLP

8110 Gatehouse Road, Suite 100 East

P.O. Box 747

Falls Church, VA 22040-0747

703-205-8000

CPN